



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,561	10/24/2003	Jung Yong Kang	2950-0266P	7518
2292	7590	10/04/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			CHU, RANDOLPH I	
			ART UNIT	PAPER NUMBER
			2624	

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,561

Applicant(s)

KANG, JUNG YONG

Examiner

Randolph Chu

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of recorded in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 USC 103(a) as being unpatentable over Duruöz et al. (US Patent 6,658,056) in view of Morel (US Patent 6,498,814) and Acharya (US Patent Application 2003/0021486).

Duruöz et al. teaches checking an encoding type of an original source image (col. 12 lines 25-42).

Duruöz et al. does not teach checking an encoding type of a discrete cosine transformed macro block; converting the encoding type of said macro block into a frame type or a field type if the checked two encoding types are different; and enlarging said converted macro block using the inverse discrete cosine transform.

Morel teaches converting the encoding type of said macro block into a frame type or a field type if the checked two encoding types are different (col. 2 line 53 – col. 3 line 7), and in order to decide whether convert the type or not, encoding type of a discrete cosine transformed macro block has to be known by the method which reads on claim limitation of checking an encoding type of a discrete cosine transformed macro block.

Acharya teaches enlarging macro block using the inverse discrete cosine transform (para. [0027]).

Duruöz et al., Morel and Acharya are analogous art because they are in the “same field of endeavor”, image processing that deal with DCT/IDCT.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to convert the encoding type to match types and enlarge macro block using IDCT in the method of Duruöz et al.

The suggestion/motivation for doing so would have been to reduce in the number of operations to reduce cost (Morel, col. 3 lines 8-13) and encoding the image is accordance with the type of impute allows for better image reproduction and more efficient techniques to accomplish the same results with better or similar enlarged image quality (Acharya, para. [0002]). Performing an IDCT is a standard process as to be able to output the final image.

Therefore, it would have been obvious to combine Morel and Acharya with Duruöz et al. to obtain the invention as specified in claim 1.

Regarding claim 2, Duruöz et al. teaches the encoding type of said original source image is identified as either a field type or a frame type by using at least progressive_sequence information or picture_structure information (col. 12 lines 25-42).

Regarding claim 3, Duruöz et al. teaches the encoding type of said macro block is identified as either a field type or a frame type by using DCT_type information contained in a header of said macro block (col. 12 lines 25-42).

Regarding claim 6, Duruöz et al. teaches original source image is received through a digital broadcast (col.8 lines 7-19).

Regarding claim 7, Duruöz et al. teaches original source image is reproduced from an optical disk (col.8 lines 7-19).

In regard claim 4, 8 and 9, Duruöz et al. modified by Morel and Acharya teaches all the limitations of claim 1 (see above) except limitation of claims 4, 8 and 9.

Regarding claim 4, Morel teaches converting the encoding type of said macro block so that the encoding type of said macro block coincides with the encoding type of said original source image, if the checked two encoding types are different (col. 2 line 53 – col. 3 line 7).

Regarding claim 4, Morel teaches enlarging said macro block using the inverse discrete cosine transform without converting the encoding type of said macro block if the checked two encoding types are identical (col. 2 line 53 – col. 3 line 7).

Regarding claim 8, Morel teaches that if the encoding type of said original source image is a frame type and the encoding type of said macro block is a field type, then converts the encoding type of said macro block from the field type into a frame type (col. 2 line 53 – col. 3 line 7).

Regarding claim 9, Morel teaches that if the encoding type of said original source image is a field type and the encoding type of said macro block is a frame type, then converts the encoding type of said macro block from the frame type into a field type (col. 2 line 53 – col. 3 line 7).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to convert the encoding type to match types in the method of Duruöz et al. modified by Morel and Acharya.

The suggestion/motivation for doing so would have been to reduce in the number of operations to reduce cost (Morel, col. 3 lines 8-13).

Therefore, it would have been obvious to combine Morel and Acharya with Duruöz et al. to obtain the invention as specified in claim 4, 8 and 9.

In regards claim 10, Duruöz et al. teaches detecting means for detecting an encoding type of a macro block (col. 12 lines 25-42).

Duruöz et al. does not teach converting means for converting the encoding type of said macro block to either a field type or a frame type; control means for detecting an encoding type of an original source image, and controlling said converting means depending upon the detected encoding type of said macro block and the detected encoding type of said original source image; and enlarging means for enlarging said macro block received from said converting means using the inverse discrete cosine transform.

Morel teaches converting means for converting the encoding type of said macro block to either a field type or a frame type and control means for detecting an encoding type of an original source image, and controlling said converting means depending upon the detected encoding type of said macro block and the detected encoding type of said original source image (col. 2 line 53 – col. 3 line 7).

Acharya teaches enlarging means for enlarging said macro block received from said converting means using the inverse discrete cosine transform (para. [0027]).

Duruöz et al., Morel and Acharya are analogous art because they are in the "same field of endeavor", image processing that deal with DCT/IDCT.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to convert the encoding type to match types and enlarge macro block using IDCT in the method of Duruöz et al.

The suggestion/motivation for doing so would have been to reduce in the number of operations to reduce cost (Morel, col. 3 lines 8-13) and encoding the image is accordance with the type of impute allows for better image reproduction and more

Art Unit: 2624

efficient techniques to accomplish the same results with better or similar enlarged image quality (Acharya, para. [0002]). Performing an IDCT is a standard process as to be able to output the final image.

Therefore, it would have been obvious to combine Morel and Acharya with Duruöz et al. to obtain the invention as specified in claim 10.

Regarding claim 11, Duruöz et al. teaches said detecting means identifies the encoding type of said macro block as either a field type or a frame type by examining DCT_type information contained in a header of said macro block. (col. 12 lines 25-42).

Regarding claim 12, Duruöz et al. said control means identifies the encoding type of said original source image as either a field type or a frame type by examining at least progressive_sequence information or picture_structure information (col. 12 lines 25-42).

Regarding claim 15, Duruöz et al. teaches said original source image is received through a digital broadcast (col.8 lines 7-19).

Regarding claim 16, Duruöz et al. teaches said original source image is reproduced from an optical disk (col.8 lines 7-19).

In Regard claims 13, 14, 17 and 18, Duruöz et al. modified by Morel and Acharya teaches all the limitations of claim 10 (see above) except limitation of claims 13, 14, 17 and 18.

Regarding claim 13, Morel teaches said control means controls said converting means so that the encoding type of said macro block is converted into the encoding type of said original source image, if the encoding types of said macro block and said original source image are different (col. 2 line 53 – col. 3 line 7).

Regarding claim 14, Morel teaches that said enlarging means enlarges said macro block using the inverse discrete cosine transform without converting the encoding type of said macro block if the detected two encoding types are identical (col. 2 line 53 – col. 3 line 7).

Regarding claim 17, Morel teaches that if the encoding type of said original source image is a field type and the encoding type of said macro block is a frame type, then said converting means converts the encoding type of said macro block from the frame type into a field type (col. 2 line 53 – col. 3 line 7).

Regarding claim 18, Morel teaches that if the encoding type of said original source image is a field type and the encoding type of said macro block is a frame type, then said converting means converts the encoding type of said macro block from the frame type into a field type (col. 2 line 53 – col. 3 line 7).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to convert the encoding type to match types in the method of Duruöz et al. modified by Morel and Acharya.

The suggestion/motivation for doing so would have been to reduce in the number of operations to reduce cost (Morel, col. 3 lines 8-13).

Therefore, it would have been obvious to combine Morel and Acharya with Duruöz et al. to obtain the invention as specified in claims 13, 14, 17 and 18.

Regarding claim 19, Duruöz et al. teaches means for checking an encoding type of an original source image of a discrete cosine transformed macro block (col. 12 lines 25-42).

Regarding claim 19, Duruöz et al. does not teach means for converting the encoding type of said macro block into a frame type or a field type if the checked two encoding types are different and means for enlarging said converted macro block using the inverse discrete cosine transform.

Regarding claim 20, Duruöz et al. does not teach means converts the encoding type of said macro block so that the encoding type of said macro block coincides with the encoding type of said original source image, if the checked two encoding types are different.

Morel teaches that means converts the encoding type of said macro block so that the encoding type of said macro block coincides with the encoding type of said original source image, if the checked two encoding types are different (col. 2 line 53 – col. 3 line 7).

Acharya teaches enlarging means for enlarging said macro block received from said converting means using the inverse discrete cosine transform (para. [0027]).

Duruöz et al., Morel and Acharya are analogous art because they are in the “same field of endeavor”, image processing that deal with DCT/IDCT.

Art Unit: 2624

At the time of the invention it would have been obvious to a person of ordinary skill in the art to convert the encoding type to match types and enlarge macro block using IDCT in the method of Duruöz et al.

The suggestion/motivation for doing so would have been to reduce in the number of operations to reduce cost (Morel, col. 3 lines 8-13) and more efficient techniques to accomplish the same results with better or similar enlarged image quality (Acharya, para. [0002]).

Therefore, it would have been obvious to combine Morel and Acharya with Duruöz et al. to obtain the invention as specified in claim 19 and 20.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randolph Chu whose telephone number is 571-270-1145. The examiner can normally be reached on Monday to Thursday from 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

Art Unit: 2624

more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RIC/



JOSEPH MANCUSO
SUPERVISORY PATENT EXAMINER